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ABSTRACT

This publication is the first in the series, "New Dimensions in Higher Education," which developed from a concern for the problems facing colleges and universities. Independent study and its implications for increasing educational effectiveness are examined in terms of: honors programs; independent study programs; the interest in, and scope, context, and economics of independent study; and the research needed in independent study. Pilot experimentation is recommended for providing independent study within an integrated curriculum; for setting minimum time requirements for a course of independent study; for reviewing teaching methods; for broadening honors-type approaches to independent study; for making institutional provision for early admission, advanced placement, or credit for prior learning; and for developing working models. (LBH)

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NEW DIMENSIONS in Higher Education

Number 1

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION

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Independent Study

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FOREWORD

WITH THIS PUBLICATION the Division of Higher Education introduces a series under the general title, "New Dimensions in Higher Education." Documents in this series are prepared by the staff and consultants of the Programs Branch of the Division of Higher Education with the help of persons in the Office of Education, in other agencies of Government, in national and regional organizations, and on college and university faculties. Each paper draws upon a common resource: the Division's Clearinghouse of Studies on Higher Education.

The series "New Dimensions in Higher Education" grows out of a concern for the problems facing the Nation's colleges and universities. It proposes to help meet these problems by presenting the findings of research and experience bearing upon them. Implicit is the assumption that such research and experience are basic to the exercise of institutional leadership.

Readers are urged to contribute results of their own studies and experience to augment material now available for review. Their advice is also solicited in order that this effort to assist in the study and improvement of American higher education will be as sound as possible.

Each publication in the series will deal with a particular educational problem. It will attempt to present evidence assembled to describe practices which appear promising, and to direct the reader to useful sources of additional information and counsel.

This initial publication is concerned with independent study and its implications for increasing educational effectiveness. Institutions with the greatest experience in this type of study are deepening and expanding their programs. The history of this experimentation suggests that greater reliance can be placed on well-planned independent study throughout the college years for average as well as superior students. Independent study programs hold sufficient promise to warrant the careful attention of all persons concerned with increasing the effectiveness of higher education.

Homer D. Babbidge, Jr., Assistant Commissioner
for Higher Education.

Harold A. Haswell, Director, Higher Education
Programs Branch.

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I. INTRODUCTION

HONORS PROGRAMS are called independent study programs on some campuses and this designation of them is recommended in four early surveys[1] of these programs and in the most recent (1957) and most comprehensive.[2] This seems reasonable because, more than anything else, independent study seems to characterize "honors" work. As a matter of fact, all the aforementioned surveys identify honors with independent study. Of late there has been much experimentation with independent study quite outside of "honors" programs. In addition, there are other programs and practices that advance the purposes of independent study but are not always identified with it. Included are Socratic, problem, and case methods of instruction, student research, and administrative and curricular practices that introduce greater flexibility into academic programs and so provide an opportunity for independent study. The concern of this paper is with the phenomenon of independent study in its several manifestations. Whether these manifestations or forms of independent study are the product of convergent, divergent, or parallel evolution is an interesting question but one that is best left to the educational historian. For some, independent study is individual study; for others it is self-directed study; for still others, it is study done outside of organized courses and/or the usual academic setting. In some instances the term is reserved for work done off the campus. While independent study may have these attributes, the essential element would seem to be the independence of student learning.

The activities identified in this paper as manifestations of independent study might be classified according to the primary purpose they advance, the student population they serve, or the curricula or pedagogical processes employed. This might improve our understanding of these programs

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[1] "Honors Courses in Colleges and Universities," by Mary Barbara Taylor. Unpublished M.A. thesis, Los Angeles, California, Occidental College, 1930.

"Honors Work in Institutions Accredited by the American Association of Universities," by Mary Barbara Taylor and J. H. Sinclair. School and Society, Vol. XXXIII, Feb. 14, 1931.

"Honors Work and the College Library: A Consideration of the Library Implications of Independent Study Programs." The Library Quarterly, Vol. XII, April 1942.

"Honors Courses in American Colleges and Universities," by Frank Aydelotte. Bulletin of the National Research Council, Vol. 7, Part 4, Jan. 1924.

[2] The Independent Study Program in the United States, A report on an Undergraduate Instructional Method, by the Committee of Educational Inquiry, College of Wooster, Wooster, Ohio (Robert H. Bonthius, F. James Davis, J. Garber Drushal, Frances V. Guille, and Warren P. Spencer). New York: Columbia University Press, 1957.

but not of independent study. To understand independent study one must see it as a whole. To do this one must identify the many "bits" of experience and fuse them into a composite that does not exist today in any program or category. Our disposition, accordingly, is not to categorize independent study beyond recognizing "honors," "independent study," and "flexibility" programs--all in quotation marks. This we do reluctantly and only in the interest of good reporting. If an institution considers its program one in "honors," it is so recognized. If it describes its program as "independent study," this phrase is used. Independent study without quotation marks is reserved for the inclusive phenomenon.

The almost universal complaint of faculties and students caught up in independent study is that the program they know, featuring some one purpose, does not achieve the "plus values" they expected of it. It does not do this because no one program or category has seriously sought to achieve these values. Actually, there is some question as to whether a composite of the several programs has purposes which, if achieved, would realize these values. Accordingly, the effort in this publication is to examine independent study in the mass and to try to find in the aggregate experience an adequate model.

The nomenclature employed in connection with independent study and honors programs is confused and confusing. Drushal and his collaborators wrestled with the problem for six pages and finally entitled their survey The Independent Study Program in the United States.[3] Our use of the words independent study reflects our experience with independent study and honors programs, as we have come to know them through the operation of the U. S. Office of Education's Clearinghouse of Studies on Higher Education. Our particular concern with honors programs is the contribution they make to independent learning. With honors, independent study, or the other programs and practices identified in this paper, the criterion employed is that they be instruments of independent learning in an extraordinary sense. Excluded would be those programs, courses, and practices, irrespective of the name given them, which make only a casual or incidental contribution to independent study. Since some "courses" make greater use of independent study, hour for hour, than some so-called programs, it would seem a disservice to independent study to exclude courses. There is even reason to believe that some experimental courses may, at the moment, constitute the cutting edge of the independent study movement. Of the practices designed to advance independent study, there are, for example, Brooklyn College's exemption of Dean's List students from attendance regulations and the University of California's (Santa Barbara College) waiver of certain course requirements through special examination. These devices permit and encourage students to decide for themselves how their learning time may best be occupied.

[3] Ibid.

Other practices, as described by Charles C. Cole, Jr.,[4] include advanced placement which, at least in the case of Harvard, gives "leisure to the student in his fourth year to do whatever he wishes, to attend courses, to take an additional senior tutorial, to read on his own, or to take graduate work."[5] Also cited by Cole are Harvard's course reduction for independent study; Reed's senior thesis for those who pass a special qualifying exam in their junior year; tutorial plans such as those at the University of Michigan, the University of Chicago, and Harvard; special courses for special students at the California Institute of Technology, San Francisco State College, Hiram College, and many others.[6] "The scholars of the house plan, small seminars for honors candidates in their major fields of study, sophomore seminars in the residential colleges which may be taken in lieu of a regular lecture class, and the directed studies program which is Yale's brand of general education and which is limited to the top quarter of the student body,"[7] all provide "flexibility" and an opportunity for independent study. Special devices available for upperclassmen, such as Stanford's senior colloquia, Reed's senior symposium, and the University of Chicago's preceptorials in some third year courses are other ways in which the purposes of independent study are met.

While in all of these programs and practices the "focus [is] upon the individual instead of the group [the relationship] between teacher and student [need not always be] a person-to-person [one]."[8]

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[4] Flexibility in the Undergraduate Curriculum, A report to the Carnegie Corporation, by Charles C. Cole, Jr., Lafayette College, 1958.

[5] Ibid., p. 14.

[6] University of Michigan, Oberlin, University of Chicago, Massachusetts Institute of Technology, and Stanford.

[7] Flexibility in the Undergraduate Curriculum, op. cit., p. 31.

[8] "The Honors Program," memorandum dated March 28, 1958, to the Faculty from W. Altus, Chairman of the Committee on Educational Policy, University of California (Santa Barbara College).

II. HONORS PROGRAMS

WHILE THERE APPEARS to be a very general disposition across the country to be more attentive to the requirements of the gifted student there also seems to be a trend toward having this student share a considerable part of his education with those less endowed. That such an accommodation can be made and with no disadvantage to the superior student (or to the average student) is indicated by Santa Barbara's experience with its honors-general education program and Washington State University's experimentation with at least one of its "integrated courses."[9] This has been the experience of Boston College[10] as well and squares with the findings of projects 1 and 2 of the University of Michigan's Instructional Efficiency Research Program.[11] Actually, this experimentation seems to be the dynamic front in what is a very dynamic movement.

Honors programs include curricula for "gifted" students (University of Arkansas), for "superior," and "good" students (University of Kansas), and for "above average" students (University of Texas). If any trend is discernible, both in the mass and on those campuses that have had the longest experience with honors, it is to broaden the program, following through some such sequence as the above. The estimate of the authors of the Wooster study is that "not nearly so many voluntary programs announce specific grade requirements in order to elect independent study [honors] as the Umstattd report (1935) implies. This may indicate a growing conviction of the value of independent study for the more ordinary student. Certainly such a conviction developed over the years in a number of the twenty institutions which are

[9] "Teaching an Integrated Course in the Biological Sciences," by W. R. Hatch and H. K. Buechner, Improving College and University Teaching, May 1953, pp. 3-11, and the following articles by W. R. Hatch from the same magazine: "The Socratic Method in Modern Dress," summer 1957, pp. 60-63; "Inquiry Into Inquiry," autumn, 1957, pp. 93-99; "The Laboratory," spring 1958, pp. 51-54; "When Students Play on the Team," spring 1958, pp. 49-50; "The 'Dialog'," summer 1958, pp. 73-82; "The Examination," autumn 1958, pp. 126-35; "The Lecture," winter 1958, pp. 21-25.

[10] "Honors Program, College of Arts and Sciences," 1958, Boston College, p. 1.

[11] "Effects of Varying Degrees of Student Interaction and Student-Teacher Contact in College Courses," by Thomas S. Parsons and Warren A. Ketcham, University of Michigan; and Leslie R. Beach, Whitworth College, 1958, Instructional Research Program, Project 2, School of Education.

reported on in chapters two and three."[12] The same survey also reports that "several administrators expressed interest in further liberalization of independent study[honors]opportunities. Said one, 'we are also certain that independent study[honors]should be open to the average student.'"[13]

According to the Wooster study, the change recommended most frequently by teachers and students in independent study programs is that the program be extended "to more undergraduates,"[14] that more be done in "the first years."[15]

The tendency to broaden honors programs has been prompted by the discovery that:

(a) Grade points were not necessarily good indicators of the students' ability to profit from such programs.

(b) Not every superior student, as identified by his grade points, was interested in honors work. Brooklyn College in a Study on Superior Students identified as likely prospects for independent study (honors) programs, students whose qualifications were "intuitive perception, maturity of thinking, independence in thinking and working, and ability in expression." Their conclusion was that something "more than merely intellectual performance" was required,[16] that " ... the identification of the superior student--the student who has outstanding gifts of creativity, intellectual curiosity, originality, or research ability--remains a problem."[17]

(c) Students electing honors programs as upperclassmen have been found to be poorly prepared for such work because their previous training lacked the necessary depth and/or breadth.

(d) The passive role engendered by the conventional lecture, laboratory, and conference methods to which honor students were exposed as freshmen and sophomores made honors work difficult, irksome, or distasteful.

Another manifestation of the disposition to broaden or liberalize honors programs is the increasing concern shown for the background, the liberal-general education of honors students. This interest takes the form of revitalized liberal arts curricula, of programs in general honors (University of Colorado, et al.), and in the exploitation of general education programs when they are strong enough to support such a development. Such is the case at Florida State University, Santa Barbara College (University of California), the University of Arkansas, the University of Texas--where there is a "set" curriculum for freshmen and sophomores--and at Miami University in its "common" curriculum. If maximum provision is to be made for student communication, in independent or any study, some common curricular

[12] The Independent Study Program in the United States, op. cit. pp. 32-98.
[13] Ibid., p. 65.
[14] Ibid. p. 87
[15] Ibid. p. 90
[16] "Study on Superior Students, Part II," by Naphtali Lewis, 1957, Brooklyn College, p. 4.
[17] "Study on Superior Students, Part I," by Naphtali Lewis, 1957, Brooklyn College, p. 5.

experience appears necessary. If students can communicate on many subjects, they can instruct each other in these subjects. Even in a common, prescribed curriculum the student's freedom of choice, if his study is "independent," is as great, if not greater, than that which is usually exercised in an elected curriculum. Where the student's inquiry is open-ended, his search is for ultimate explanations, for the basic ideas, which are rarely circumscribed by a course but lead out into other subject matter.

Prescription is not a foreign concept in independent study today, because one-half of the twenty schools studied by Drushal et al indicate that theirs was a "required" program. Nor is it foreign to our political or educational tradition of freedom (and responsibility), for just as colleges and universities have the option, and the duty, of choosing how it is they mean to provide a higher education, so students have the privilege (whether they exercise it or not) of choosing the institution which they think or feel will best provide them with the education they need. When a student elects to enroll in an institution with a prescribed curriculum he, in effect, chooses such a program. Institutions that do not make clear choices but are all things to all students are in effect irresponsible, for they not only make it more difficult for students to exercise their freedom of choice but ask them to make decisions that they are unwilling or unable to make. Related to this problem is the question of whether credit should or should not be given for honors work. This is being resolved responsibly by giving credit and counting it as credit towards graduation.

While many of the new honors programs--for example, those at Indiana University, the University of Michigan, the University of Texas, the University of North Carolina, the University of Kansas, the University of Colorado and the State University of Iowa--have honors sections at the freshman and sophomore levels, Santa Barbara College insists that honor students take the same courses as their fellows, and usually in the same sections. While every effort is made to offer the gifted student the challenge of work commensurate with his ability "there is no intention to isolate the able student so completely as to deprive the general student body and faculty of his powers as a leavening agent .... In a general sense the honor student...studies the same material as the other students but in a more intensive or extensive fashion."[18] Neither does honor standing carry with it exemptions from the requirements of a good general education and sound training in the major. "However, some of the general education requirements which are normally specified in terms of courses may be met, if the honor student so chooses, through examinations."[19] In Boston College, honor students "are placed in special sections of required courses, to which sections are

[18] "The Honors Program," op. cit.
[19] Ibid., p. 2.

added some five to seven students of comparable ability so that the honor students will not be isolated ... [and] may serve as a leaven upon the remainder of the student body to stir them up to a struggle for intellectual excellence."[20]

Honors programs have not only moved down into the sophomore and freshmen college years but also into the high school. Faculty members of the University of Colorado and MacMurray College, among others, are experimenting with high school honors programs and express satisfaction with the achievements made by the students.

[20] "Honors Program, College of Arts and Sciences," op. cit., p. 1.

III. INDEPENDENT STUDY PROGRAMS

IN INDEPENDENT STUDY as with honors programs two principles have been affirmed and confirmed: (a) That independent study should be open to most, if not all students, and (b) that this type of study should begin in the freshman year.

The experience reported below has caused institutions interested in honors programs to look again at the preparation of those students in lower division programs and even in high school. It has also led those institutions to re-examine the teaching methods employed prior to and during honors work to determine whether they were too mechanical, the student's role too passive, and whether they were appropriate to institutions of higher education. Honors programs have, accordingly, begun to identify themselves more and more with the college's or the university's program and have begun to convert this program into something which not only supports honors work but reflects the purposes of higher education in more effective ways. The disenchantment of honors programs with elaborate course prerequisites, with credits and hours, and with current conceptions as to what constitutes optimal student loads, has likewise been transferred, in part, to the college's program.

In institutions that make independent study their unabashed concern, students are honored but the honor they are shown is the faculty's acceptance at face value of the student's presumed interest in acquiring a higher education.

As with honors programs, those schools with the greatest experience in independent study are broadening and deepening their experimentation. "An unexplored area of great interest would be an experiment designed to test the independent study method in a situation in which the student has all of his courses under this plan. This, however, raises many practical problems which seem to have no easy solution unless all courses open to members of a particular class, or even the whole college program, were to be given under independent study."[21] Samuel Gould, former president of Antioch College, advocates replacing mere "schooling" with independent learning designed to develop creativity of mind. To do this he would treat all students as potentially outstanding in the hope of unearthing a few hidden

[21] "Carleton Independent Study Experiment 1957-58," p. 3.

treasures and in the process stimulating the mass to greater achievement than it might otherwise attain.[22]

Oberlin's observation is that "teaching by the experimental and control methods at the same time was cumbersome and tended to make for invidious comparisons of the two procedures among the students; whereas if the course were taught one way or the other, the students would simply accept the procedure as being the professor's way of teaching."[23] An independent study whole may not, however, be the sum of its parts; it could be more. It could also be less, not because of anything intrinsically wrong with independent learning, but because the greater academic dislocation could easily increase the amount of faculty resistance. On the other hand, if independent study were to become an academic way of life, it might be accepted as such.

In independent study, as with honors programs, the present disposition is to begin them in the freshman year. Antioch reports its experience as follows:

> "Our evidence thus far would seem to indicate that contrary to the more general expectation ... students at the first year level may be more ready to accept and accomplish independent study than the more mature upperclass students. There is a greater readiness on the part of the younger students to accept the newer teaching methods, partly because they have not been 'contaminated' on the college level by an additional two or three years of teacher-directed learning, and partly because college is supposed to be different."[24]

Cole, who visited some 10 institutions, observes:

> "A freshman comes to college full of enthusiasm, expecting something new and different. Frequently, his enthusiasm is dulled by class attendance, his love of learning diminished by the slow routinized pace he is forced to follow. Perhaps the strategy to try is to start with freshmen and give them independent study assignments before they get bogged down with formal course work. If it can be proved that independent work has merit for freshmen, then it can be applied at all levels."[25]

While the New College Plan of Amherst, Smith, Mt. Holyoke, and the University of Massachusetts[26] cannot be evaluated as an extant program, its proponents propose to exploit Antioch's experience and to act on Cole's suggestion. "The New College curriculum is designed to establish a pattern of independent behavior by intensive training in it at the outset and to reinforce the habit of initiative thereafter by continuing to provide situations which call for it." Their reason, in their own words, for making

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[22] "Breaking the Thought Barrier," by Samuel B. Gould, Journal of Higher Education, Vol. XXVI, No. 8, November 1955, pp. 401-07.

[23] "Report on Independent Studies Experiments at Oberlin College, 1957-58," p. 24.

[24] Letter from Samuel Baskin, Antioch College, to W. R. Hatch, 3/27/58.

[25] "Flexibility in the Undergraduate Curriculum," op. cit., p. 31.

[26] "The New College Plan: A Proposal for a Major Departure in Higher Education," by C. L. Barber, Amherst College; Donald Sheehan, Smith College; Stuart M. Stoke, Mount Holyoke College; and Shannon McCune, Chairman, University of Massachusetts, 1958.

independent study the central feature of their plan is that, "The most important contribution a college can make to its students is to develop in them a capacity to continue their education throughout their lives."[27] New College intends to develop this capacity by training students to educate themselves. "New College will aim to fit its students to master subjects, chiefly on their own initiative, by providing them with the necessary skills, resources, and intellectual stimulation."[28] It is hoped that by its emphasis upon independent learning New College may usher in a new academic way of life.

New College hopes to recruit better-than-average students for the start of its experiment, because a superior student body will make the initial experimentation easier. When the college has been established for a few years and when its accomplishments have been recognized, a more liberal admissions policy will be adopted. This fact is important--the proponents of the plan do not feel that average students cannot profit by independent study; they merely want to acquire sound footing and a certain amount of prestige before broadening their experimentation.

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[27] Ibid, p. 3.
[28] Ibid, p. 9.

IV. THE INTEREST IN INDEPENDENT STUDY

THE INTEREST in independent study is evidenced by the following facts and developments: a survey conducted and a book written on the basis of its findings, a journal launched by a specially formed committee, a book-length series of articles written, identification of independent study by representatives of Ford and Carnegie as the most "significant development" in higher education, and eight of the first 52 cases in the CASE BOOK dealing with the phenomenon.

An indication of the interest in independent study, apart from programs and courses, is to be seen in the facts that:

(1) A survey has been made and a book written, The Independent Study Program in the United States, by Robert H. Bonthius, F. James Davis, J. Garber Drushal, Frances V. Guille, and Warren P. Spencer.

(2) An "Inter-University Committee on the Superior Student" (the I.C.S.S.) has been organized. The director of the I.C.S.S. is J. W. Cohen, Hellems 117, University of Colorado, Boulder, Colorado.

(3) A journal, "The Superior Student," has been launched by the I.C.S.S.

(4) A book-length series of articles has been written: "Inquiry Into Inquiry," "The Socratic Method in Modern Dress," et seq., Improving College and University Teaching, May 1953 to winter 1958.

(5) As early as the spring of 1958 both the Ford and the Carnegie Foundations--at least one representative--identified independent study as the most "significant development" in higher education. The Fund for the Advancement of Education reported the experimentation done on independent study in "Better Utilization of Teaching Resources."

(6) Of 52 cases selected for publication in the CASE BOOK and in SPECIAL REPORTS during the period from November 1957 to December 1958, eight deal with some aspect of independent study.

V. THE SCOPE OF INDEPENDENT STUDY

IN THE STATISTICS compiled by Bonthius, Davis, Drushal, Guille, and Spencer[11] referred to earlier, one gets some idea of the dimensions of the "movement" in the fall of 1957. In an analysis of 1,086 programs of study in 4-year colleges and universities, they identified 334 independent study programs in 286 institutions. Of the reports received by the Clearinghouse of Studies on Higher Education, 46 deal with independent study. These studies (A in the listing) are reports of substantial experimental efforts. In addition, five institutions have sent in published articles (B) which, although not classed as studies, have an important bearing on current theories and practices in independent study and honors work. Finally, some 17 colleges and universities have described their programs in letters (usually with enclosures), memoranda, or "notes" (C). The importance of these programs is such in the eyes of institutional representatives that when asked for "significant" studies they have tended in these numbers to report upon their experience with independent study. Under the three categories identified above are listed the programs, the institutions, and individuals from whom we have heard.

A. Studies.

1. Those appearing in the Clearinghouse of Studies on Higher Education, as of January 1959.

"Breaking the Thought Barrier," Samuel B. Gould, Journal of Higher Education, Vol. XXVI, No. 8, Nov. 1955, pp. 401-07. Antioch College.

"Preliminary Report on Reading Course Study," 1957. Antioch College.

"Proposal for Research on Independent Study," 1957. Antioch College.

"Student Evaluation of Course," 1957. Antioch College.

"Summary Notes--Workshop Conference Antioch-Carleton-Oberlin at Antioch College," Samuel Baskin and W. Boyd Alexander, 1957. Antioch College.

[11] The Independent Study Program in the United States, op. cit.

"An Active Program for Active Minds," Arkansas Alumnus, March 1958, pp. 10-13. University of Arkansas.

"A Proposal for Expanding the Honors Program for Superior Students in the College of Arts and Sciences of the University of Arkansas," G. D. Nichols, 1958. University of Arkansas.

"Reaching Back to the Freshmen," Harold D. Hantz, The Superior Student, Vol. 1, No. 1, April 1958, pp. 8-9. University of Arkansas.

"Provisions for Superior Students at Augsburg," 1957. Augsburg College.

"Honors Program, College of Arts and Sciences," 1958. Boston College.

"Study on Superior Students," Parts 1 and 2, 1957. Brooklyn College.

"The Honors Program" (in conjunction with a general education program, memorandum dated March 28, 1958 to the faculty from W. Altus, Chairman of the Committee on Educational Policy), 1958. University of California (Santa Barbara College).

"Report to the Faculty of the College of Letters and Science by the Special Committee on Objectives, Programs, and Requirements," pp. 54, 65-70; 1957. University of California.

"Carleton Independent Study Experiment 1957-58," 1958. Carleton College.

"The Bachelor's Degree With Honors--A Brief Description of the Nature and Aims of Honors," The Honors Council, 1957. University of Colorado.

"A Survey of Honors Programs," since 1950. University of Colorado.

"Visit to the South," Joseph W. Cohen, The Superior Student, Vol. 1, No. 3, June 1958, p. 19. University of Colorado.

"The Educational Future of Columbia University," Report of the President's Committee on the Educational Future of the University, Part 8,2; 1957. Columbia University.

"Techniques of Teaching Political Science: The Beginning Course," Robert H. Connery and Richard H. Leach, The Western Political Quarterly, Vol. XI, No. 1, March 1958, pp. 125-36. Duke University.

"Interim Report" (on an experiment on independent study), James H. Strauss, 1957. Grinnell College.

"An Experimental Comparison of a Conventional and a Project Centered Method of Teaching a College General Botany Course," Joseph D. Novak, Journal of Experimental Education, Vol. 26, March 1958, pp. 217-30. Kansas State Teachers College.

"Experiment in Brainpower," Francis H. Heller, The Superior Student, Vol. 1, No. 2, May 1958, pp. 5-6. University of Kansas.

"Honors Designations at Member Institutions of the American Association of Universities," Francis H. Heller, 1957. University of Kansas.

"Opportunities for the Good Student," 1958. University of Kansas.

"A Program for Gifted Freshmen and Sophomores in the College of Arts and Sciences at the University of Kansas," George R. Waggoner, Bulletin of Education, Vol. 12, No. 1, fall issue, November 1957. University of Kansas.

"MacMurray College and Jacksonville (Illinois) High School Collaborate in Program for Superior Students," Leroy Garrett and Louis W. Norris, The Gifted Child Quarterly, Vol. 2, No. 1, winter 1958, pp. 3-8. MacMurray College.

"Marquette University Program of Independent Study," William H. Conley, 1957. Marquette University.

"A Report of the Committee for the Superior Student, College of Arts and Science, Miami University," Spiro Peterson, 1958. Miami University.

"The Honors College at Michigan State University," Stanley J. Idzerda, The Superior Student, Vol. 1, No. 2, May 1958, pp. 13-14. Michigan State University.

"A Proposal Dealing With Superior Students," 1956. Michigan State University.

"Effects of Varying Degrees of Student Interaction and Student-Teacher Contact in College Courses" (also Interim Report and Abstract), Thomas S. Parsons, Warren A. Ketcham, and Leslie R. Beach, Instructional Research Program, Project 2, School of Education, 1958. University of Michigan.

"The Honors Program," College of Literature, Science, and the Arts, 1958. University of Michigan.

"A Departmental Honors Program," 1957. Millersville State Teachers College.

"An Experimental Independent Study Program at Morgan State College, 1957-58," 1958. Morgan State College.

"Moving on to the Juniors and Seniors," E. A. Cameron, The Superior Student, Vol. 1, No. 1, April 1958, pp. 6-7. University of North Carolina.

"Report on Independent Studies Experiments at Oberlin College, 1957-58," Oberlin College.

"A Look at the Talented," H. F. Harding, The Superior Student, Vol. 1, No. 2, May 1958, p. 15. Ohio State University.

"An Honors Plan in Government at Oklahoma," Sam Krislov, The Superior Student, Vol. 1, No. 3, June 1958, pp. 9-10. University of Oklahoma.

"How Necessary are the Lecture and Textbook in a First Course in American History?" An Experiment in Independent Study, Thomas N. Bonner, 1958. University of Omaha.

"Honor Programs," 1958. Oregon State College.

"School of Science Proposed Degree Honors Program," 1958. Oregon State College.

"Increasing the Student's Responsibility for His Own Education," 1957. Rensselaer Polytechnic Institute.

"Final Report on a Grant for Better Utilization of Teaching Resources" (Reading courses for upperclassmen; the objective, superior educational experience and economy in the use of faculty), 1958. Rutgers University.

"Teamwork in St. Louis," Thomas D. Langan, The Superior Student, Vol. 1, No. 3, June 1958, pp. 13-14. St. Louis University.

"The Texas Brand of Honors," Harry H. Ransom, The Superior Student, Vol. 1, No. 2, May 1958, pp. 9-10. University of Texas.

"The Case for Corporate Wholeness," (Proposal of the Committee on Educational Policy, Professor Rob Roy, Chairman). The Superior Student, Vol. 1, No. 2, May 1958, pp. 7-8. Vanderbilt University.

"The Independent Study Program in the United States," Robert H. Bonthius, F. James Davis, J. Garber Drushal, Frances V. Guille, and Warren P. Spencer, New York: Columbia University Press, 1957, 259 pp. College of Wooster.

The contribution of institutions to independent study or honor programs is suggested by the following list, which indicates the number of studies, by institution, to be found in the Clearinghouse as of January 1959. The number following the institution indicates

the number of papers submitted. If no number is indicated, only one study has been received. Not all of these institutions are accounted for in the independent study listing above, because some of the studies are filed under the Clearinghouse category "Teaching."

University of Colorado--8
Antioch College--5
University of Kansas--5
University of Arkansas--3
University of Michigan--3
University of California--2
Michigan State University--2
Oregon State College--2
Washington State University--2
Augsburg College
Beloit College
Boston University
Brooklyn College
Carleton College
Columbia University
Duke University
Grinnell College
Hillyer College
University of Indiana
Kansas State Teachers College
University of Kentucky
MacMurray College
Marquette University
Miami University
Millersville State Teachers College
Morgan State College
University of New Mexico
University of North Carolina
Oberlin College
Ohio State University
University of Oklahoma
University of Omaha
Rensselaer Polytechnic Institute
Rutgers University
St. Louis University
University of Texas
Thiel College
Vanderbilt University
College of Wooster

2. Studies received by the Clearinghouse from January 1959 to October 1959:

"Report on the Senior Seminar in General Education at Allegheny College," 1955, Allegheny College.

"The New College Plan," 1958, Amherst College, Smith College, Mount Holyoke College, and University of Massachusetts.

"The Structure of an American Studies Honors Program at Amherst College," Edwin C. Rozwenc, The Superior Student, Vol. 1, No. 6, Dec. 1958, pp. 10-11. Amherst College.

"Experiment on Independent Study, 1957-1958," 1958, Antioch College.

"Instructor-Student Contact Patterns and Training Procedures," 1959, Antioch College.

"Progress Report on the Carnegie Study of the Antioch Educational Program, February 1959," Antioch College.

"Current Issues in Higher Education, 1958," 1958, Association for Higher Education.

"The Provision of Special Opportunities to Stimulate Performance in College on the Part of Students with Superior Ability," 1955, Association of Minnesota Colleges, College of St. Thomas.

"An Accelerated Independent Study Plan for a Small Liberal Arts College," 1958, Columbia College.

"A New Educational Program," Donald H. Morrison, Dartmouth Alumni Magazine, April 1957, pp. 20-25. Dartmouth College.

"The Honors Program in History," 1959, De Paul University.

"The Honors Program in English," Fred L. Bergmann, 1959, De Paul University.

"Report of the Self Study Committee, September 1955," Ch. 5, De Pauw University.

"The Upper Division in the College of Liberal Arts of Drake University, 1954-1955," pp. 95-106, Drake University.

"Earlham College, Faculty Self-Study, 1954-1955," pp. 14-17, Earlham College.

"Evaluation of the Educational 'Experiment' Carried on at and by Grinnell College in the Academic Years 1956-57 and 1957-58," Charles F. Haner, Grinnell College.

"College of Liberal Arts at Howard Institutes Honors Program," 1958, Howard University.

"The Honors Program," Rhodes Dunlap, 1958, State University of Iowa.

"Observations on the Gifted Student in College," Francis Heller, Proceedings--Junior College Workshop, 1958, University of Kansas.

"Flexibility in the Undergraduate Curriculum," Charles C. Cole, Jr., 1958, Lafayette College.

"The Honors Program," 1959, University of New Mexico.

"School of Science Proposed Degree Honors Program," 1958, Oregon State College.

"Study on the Superior Student," 1959, Our Lady of Cincinnati College.

"Faculty Educational Policies Committee Report on Independent Work Projects," 1957, Reed College.

"The Gifted Student--Undergraduate and Graduate," Toward More Effective Teaching at Rensselaer, No. 4, December 1958, pp. 2-4. Rensselaer Polytechnic Institute.

"Two Years of Experimental Work on Various Teaching Methods and Class Sizes," Roland H. Trathen, 1958, Rensselaer Polytechnic Institute.

"Superior Student Program," 1958, College of St. Mary of the Springs.

"Self-Study Report," Ch. 6, 1958, Southwestern at Memphis.

"Experiments in Teaching Effectiveness Applied to Introductory Sociology," Vernon Davies, Edward Gross, and James F. Short, Jr., 1958, Washington State University.

"An Experimental Approach to the Teaching of General Biology," Victor M. Cutter, Jr., 1958, The Woman's College, University of North Carolina.

"Yale's Scholars of the House," The Superior Student, Vol. 1, No. 6, December 1958, pp. 4-7. Yale University.

B. Published Articles, other than the studies reported above:

"Engagement Without Ends," Bertram Morris, The Superior Student, Vol. 1, No. 3, June 1958. University of Colorado.

"The Vital Ingredient: Superior Teachers for Superior Students," Walter D. Weir, The Superior Student, Vol. 1, No. 2, May 1958. University of Colorado.

"Advantages and Disadvantages of Honors Programs," Joseph W. Cohen, University of Colorado.

"The Departmental Approach," Ray L. Heffner, Jr., The Superior Student, Vol. 1, No. 3, June 1958. University of Indiana.

"Starting the Program Early," George R. Waggoner, The Superior Student, Vol. 1, No. 2, May 1958. University of Kansas.

"The General Approach," Robert C. Angell, The Superior Student, Vol. 1, No. 3, June 1958. University of Michigan.

"Superior Students in a Democracy," Dudley Wynn, The Superior Student, Vol. 1, No. 3, June 1958. University of New Mexico.

C. Correspondence and "notes" not appearing in THE REPORTER which are in the Clearinghouse files and round out as of January 1, 1959, the picture of the scope and nature of independent study:

Letter from Henry Woodward of Carleton College re independent study program.

"An Invitation to Learning," announcement of honors program at Central Missouri State College.

Letter from Lawrence G. Weiss, Managing Editor of University Honors Information Service (part of Inter-University Committee for Superior Students at University of Colorado), telling of two studies:

"The Provision of Special Opportunities to Stimulate Performance in College on the Part of Students with Superior Ability" covering 37 Minnesota institutions.

"Undergraduate Education in the Liberal Arts and Sciences at the University of Pennsylvania" by Robert B. MacLeod of Cornell.

Conference on the Superior Student in the State University--University of Colorado.

Clippings from Dartmouth College newspaper re their independent study theories and experiments.

Description of intended use of endowments to DePauw University re "Program of Curricular and Instructional Improvement for Superior Students"--proposals for pilot experiments in English and history. Consideration of interdisciplinary seminars, independent study programs, and advanced placement.

Letter from William A. Banner, Coordinator of Honors of Howard University, re experimental honors program for freshmen.

Letter from Ray L. Heffner, Jr., Chairman of Committee on Honors of Indiana University, re honors work and interdepartmental colloquia.

Letter from Manley Mandel, Chairman of Honors Council of University of Massachusetts, re purpose, eligibility, and rules of current honors program and design of potential one.

Letter from P. C. Gaines of Montana State College, re independent study experiments in general botany course, "great books" course, and "honor" course in general chemistry, to be taken by selected group of freshmen.

"Progress Toward an Honors Program at MSU, 1957-58", by Cynthia Schuster, Chairman of Honors Program Committee at Montana State University. Also publicity leaflet announcing independent study, seminars, and accelerated programs.

Letter from Edward Y. Blewett, of University of New Hampshire, re W. L. Bullock's biology course for students exempt by examination from first semester of a year course.

Letter from R. G. Carson, Jr., of North Carolina State College, re honors program.

Letter from Carydon Spruill, of University of North Carolina, re Professor Alfread Engstrom's connection with "continuing honors work" and Professor E. A. Cameron's connection with program for superior students.

Letter from J. K. Munford, of Oregon State College, re independent study in School of Science.

"Report of Henry Rutgers Scholars Committee 1957-58," letter by Samuel C. McCulloch urging administration to consider a regular honors program for exceptional freshmen, sophomores, and juniors (a program that is now in effect for seniors only).

Thiel College Catalog for 1958-59, p. 78, description of "Independent Study and/or Honors."

Letter from J. Garber Drushal, of College of Wooster, re worthwhile independent study programs at University of Oregon, Reed College, Pomona College, Shimer, and Guilford.

VI. THE CONTEXT OF INDEPENDENT STUDY

ALL INSTITUTIONS experimenting with independent study as such have expressed concern for the fact that they have not realized some of its potential or "plus values." "We may be throwing away large potential gains in favor of 'no difference.'" some declare.[20] To acquire some understanding of what is meant by "no difference" the nature of the experimentation with independent study is examined, section A. To determine the "plus values" that these institutions think they are missing, the implications in the experimentation are pondered, section B.

When implications in the experimentation with independent study (narrowly interpreted) are considered along with those seen in honors programs (narrowly interpreted), one begins to get a clear picture of the direction the independent study movement (broadly construed) is taking. (1) It is designed for most, if not all, students. (2) It is begun in the freshman year. (3) It is an integral part of the college's program. (4) It is flexible. (5) It is tolerant, if critical, of old (lecture and laboratory) and of new pedagogical, methods (Socratic, problem, case), recognizing that the critical factor in teaching and in learning is its quality. (6) It emphasizes generalization, without disparaging particularization. (7) It involves the teacher importantly. Independent study succeeds best where the teacher gives this enterprise his best scholarship. (8) It employs (does not just describe) critical methods in every aspect of the study and in every class meeting. (9) It makes provision for group learning, for some kind of student conference.

A. Outline of the Experimentation

Independent study for some of these institutions is independent reading.

(1) In one college this reading only touches its teachers and their teaching to the extent that the faculty is involved in the preparation of reading lists for the students. This is done through an all-college committee for freshmen and sophomores and by the departments in the case of majors. In this instance independent study is almost an extra-curricular activity.

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[20] "Report on Independent Studies Experiments at Oberlin College, 1957-58," op. cit., p. 22.

(2) Where independent study is a curricular phenomenon, even if it affects only a single course, the independent reading done by the student consists of:

(a) Digging out his own textbook facts, aided by reading lists and study guides,

(b) Reading more discriminately in reference books,

(c) Consulting original sources,

(d) Reading on his own in what is variously described as a special project, library research, or an assigned problem.

(3) Some corollaries of independent study as defined in 2a, b, c, and d are:

(a) To reduce the number of class meetings (eliminating them in at least one instance), as was the case in many of the Fund for the Advancement of Education's studies.

(b) To substitute for the conventional lecture, a lecture-conference or a faculty supervised group conference, seminar or dialog, meeting once a month, once every two weeks, or once a week,

(c) To organize small, independent study groups without any faculty contact,

(d) To provide for independent study in which there is neither faculty nor student contact,

(e) To introduce the student to independent study and to the critical methods it entails by lectures which instruct the student in how to study independently,

(f) To develop new types of class meetings and new concepts of the role of the teacher and of the students in such a study. These meetings are called group conferences, colloquia, or dialogs. The teaching methods involved are described as informal, Socratic, problem, or case methods. The essential element in these methods has been described as one of inquiry.[31] Land suggests that student research is the best learning experience and urges that opportunities be provided as early as the freshman year for those capable of it.[32]

[31] "Inquiry Into Inquiry," op. cit., pp. 93-99.

[32] "Generation of Greatness--The Idea of a University in the Age of Science," The Ninth Annual Arthur Dehon Little Memorial Lecture, Massachusetts Institute of Technology, by Edward W. Land, Cambridge, Mass., May 22, 1957.

Type A(1), although one of the earliest programs and well publicized, has had no imitators and no report has been made public. Of the other experiments which combine one or another of the features listed in A(2) and (3), reports have been made.

In programs involving aspects of (2) and (3), the seven faculties involved have reported that the learning was at least as good as it was in conventional classes, be they expository lectures, typical laboratories, or conferences; that the demands upon the faculty's time were generally fewer; and that the students did not ask for more individual help in independent study classes or sections than they did in conventional classes or sections. Were it otherwise, the savings reported in contact hours might be completely dissipated.

In a study in which great pains were taken to compare the achievement of students in (3c) and (3d) with that of students taught conventionally, it was discovered that campus resident students (but not professionally experienced off-campus drive-in students) who studied independently of others without any faculty supervision (3d), memorized facts and phrases as well as or better than the students in the other experimental groups, including those exposed to a conventional, teacher-led discussion course.[33] The information acquired by this kind of independent study (3d), was not, however, retained quite as well as that acquired by the students in the teacher-led discussion treatment. Professionally experienced off-campus students, on the other hand, acquired and retained most factual information when taught by a conventional lecture method described in (d), above. Because these students, as a group, were known to be far more interested in learning concrete professional procedures than in reading about abstract concepts whose practical utilities were not readily apparent, the experimenters concluded that knowledge of the predominant personal needs and goals students hope a course will satisfy is of crucial importance in predicting the relative effectiveness of various methods. This was also the experience at Antioch, The Woman's College of the University of North Carolina, et al. As a matter of fact, these and other institutions[34] have observed that, under the conditions of their early experiments, at least, students exposed to independent study did not develop any more lasting appetite for reading than those taught conven-

[33] "Effects of Varying Degrees of Student Interaction and Student-Teacher Contact in College Courses," op. cit.

[34] Antioch, Oberlin, Morgan State College, and The Woman's College of the University of North Carolina.

tionally. The experiment (3c) and (3d) described above suggests that techniques designed to encourage independent learning that do not make use of the advantages implicit in good lecture presentations, their drama, and the contagious enthusiasm of the lecturer, do so at their peril. The same seems to be true of the laboratory[36] and of field work, for to fail to provide for first-hand knowledge of the subject hardly appears wise. To make no provision for student discussion not only deprives students of one of the essential satisfactions in learning, but apparently limits their learning. Good as independent study is in theory, it cannot in its practice afford to abandon the good with the bad, which is provided by lecture, laboratory, or group discussion, without limiting the students' learning. It should instead exploit the good features of these time-honored methods, adapting them to the requirements of independent study.[36]

If it is unwise to scrap the old because it is old or to accept the new because it is new, what should be done? What are the implications in the experimentation?

B. Implications in the Experimentation

The estimate made of the experiment at the Woman's College of the University of North Carolina,[37] which combined elements of (2a) and (3b), is that while the students in the independent study program "apparently gained the same content of information [as those taught by traditional methods] with somewhat less expenditure of time in class" and "no harmful consequencies . . . were demonstrated," the approach employed did not, "within the experimental period . . . demonstrably stimulate the students toward more independent study." The reaction of the Woman's College to its experiment is so mixed that both teachers and students want to think about it before they follow it up. The reason for the lukewarm reception of the experiment is probably to be found in the fact that the substitution of a 1-hour informal discussion period for two formal lectures per week and the requirement of more reading by the students constituted the extent of the experimentation. If all a student is supposed to do is to acquire more facts from his reading, this may well be all that he will do. If this is the extent of his activity, he is not likely to find independent study very rewarding.

The Carleton group, commenting upon a program which combined elements of (2a), (2b), (2c), (2d), (3a), and (3e), is

[36] "Teaching an Integrated Course," et seq., op. cit.

[36] "Inquiry Into Inquiry," et seq., op. cit.

[37] An Experimental Approach to the Teaching of General Biology, by Victor M. Cutter, Jr., 1957-58, The Woman's College of the University of North Carolina.

understandably disappointed in the "inability of students to derive general ideas from diverse readings."[38] The students and faculty in the Antioch and Oberlin experiments, which also dealt with elements of (2a), (b), (c), (d), (e), (3a), (3b), and (3e) report their reservations about the technique of using special projects as a vehicle of independent study. The fear of the students is that too great an emphasis upon projects which are too specialized results in inadequate coverage. The corrective suggested is that the instructor should impose a greater degree of structure on the material. Grinnell, which has also used special projects in its independent study program, is convinced that to be successful these projects must be integrated into the substance of the course. The students and faculties reacting to their experience with independent study, as reported in the Wooster book, recommend that there should be a "widening [of] the scope of topics and projects."[39]

While variously expressed, the missing ingredient seems to be a proper context. The logical structure, the context, of any study or subject matter is to be found in its theoretical framework, in the "general ideas" which Carleton, and presumably the others, are seeking. The inescapable conclusion is that to realize its "plus values" independent study should be organized around such a framework. If independent study were open-ended and not limited to the study of special, intentionally circumscribed projects, the courses involved would acquire a theoretical orientation and as a consequence, a structure; for in inquiry the search is for the ultimate explanations.

A reaction of the Antioch faculty to a program in which "special orientation lectures" were provided (3e) is that such lectures in and of themselves were unsuccessful in developing "appropriate skills and attitutes;" that the students "fail(ed) to make substantial gains in . . . their ability to formulate theories and to test relevant hypotheses."[40] The "10-week survey" by which Oberlin's students were introduced to independent study is damned by faint praise. "Both the experimental and control groups agreed that the survey was somewhat helpful with more students in the control group than in the experimental group rating the period as not helping later learning at all."[41] Among the "drawbacks" seen by students and faculty in independent study (honors) programs, as reported in the Wooster study, is "the lack of preparation" for independent study. The need for more group learning "particularly where the subject before the

[38] "Carleton Independent Study Experiment 1957-58," op. cit., p. 3.
[39] The Independent Study Program in the United States, op. cit. p. 89.
[40] "Preliminary Report on the Reading Course Study 1956-1957." Antioch College, p. 7.
[41] "Report on Independent Studies Experiments at Oberlin College," op. cit., p. 15.

group is principles and procedures of research"[42] was also recognized. "We need," Antioch concludes, "new techniques for promoting intellectual independence."[43]

The problem described above apparently is that lectures about the methods of independent study, or of critical methods generally, are not very helpful. As Antioch has discovered, the best way to learn these methods is to employ them, not in lectures, not just in a 10-week survey, but in every meeting of the course and in every aspect of the study. The relentless employment of critical methods, by both the teachers and the students, appears to be essential if any notable achievement is to be made. While it is unfortunately true that most students are unprepared for independent study (the upperclassman is usually less well prepared than the freshman), the answer does not seem to be to prepare the student in some adjunct to a course, set in ahead or alongside of it, but to convert both student and teacher through something which might be described as total immersion. Similarly, to try to prepare a student for independent study in traditional courses is an unhappy expedient because the experience gained in such courses is a parody of independent study that could do more harm than good. While it is true that critical or research methods can be learned in groups[44] it is a mistake to think that this can be done in special meetings which deal with research methods quite unencumbered with a subject matter upon which the research should be done. Finally, it might be observed that what is needed is not necessarily new techniques (some of the best are very old) but the employment of new and old techniques on a scale which is new to this generation of teachers and students.

"A freedom which engenders procrastination"[45] and the need for "closer supervision"[46] are a criticism and a suggestion made by the students and faculty whose reactions are reported in the Wooster study. The problem here is basically a faulty concept of freedom. In independent study the teacher is not absolved of his responsibility for the learning of his students; he simply elects not to attempt the impossible--to do their learning for them. A freedom irresponsibly extended or accepted is license, and no more to be condoned under the mantle of independent study than elsewhere. The same is true of laziness be it that of the teacher or of the student. The antidote for licence and laziness is obviously not closer supervision but inquiry of the kind which is as demanding of the teacher as it is of the student. Independent study is "not just for students but for those inquiries

[42] The Independent Study Program ... the United States, op. cit., p. 76.
[43] "Preliminary Report on Reading Course Study," op. cit., p. 8.
[44] The Independent Study Program in the United States, op. cit., p. 9.
[45] Ibid. p. 78.
[46] Ibid. p. 89.

and that knowledge furthered in the meeting and fructification of minds at work upon exciting tasks."[47]

In much that is written about independent study and in much that is done in its name, too little attention seems to be given to purpose or intent. In too many instances, independent study is apparently held to be good for independent study's sake--or because it is a more economical way to teach. The work of Sanford and others suggests that independent study, provided it examines problems and postulates, may help institutions of higher education realize more of their purposes, be they stated as those of liberal, of general, or of higher education.

In reviewing this experimentation and in taking counsel with those who conducted it, one finds that if independent study is not approached with sophistication, if it places its exclusive or preponderant reliance upon student reading and student learning without making major accommodations in its teaching, it is not likely to be successful. Since the hollow ring of limited successes can bring a good idea like independent study into disrepute, more substantial images of independent study need to be created by those experimenting with it.

Finally, it should be observed that the experimentation with independent study (narrowly construed, in Antioch, Oberlin, University of Michigan, et al.) is but a part of the experimentation looking toward the "better utilization of teaching resources." The results of this experimentation with class size, methods, and administrative procedures reinforce some of the implications to be seen in independent study (narrowly and broadly construed). The research done on class size, for example, indicates that class size is not, by and of itself, the critical factor in teaching effectiveness. The research on "general" pedagogical methods removes the hope that some one right method will save us. "Problem-oriented approaches," however, show much promise. Since such methods are the ones employed to best effect in independent study, we are brought to the same place.

Promising as independent study is, we should not expect too much of it, too soon. Faculties and Americans being what they are--meeting crises only when they are caught up in them--perhaps the best that can be hoped for is:

(1) That in many, if not most, institutions cadres of teachers will organize themselves for experimentation with independent study;

(2) That this experimentation will be soundly conceived and will be conducted with sophistication;

[47] Conference on "The Superior Student in the State University," 1957, University of Colorado, p. 5.

(3) That in this way enough experience can be acquired and a substantial enough literature developed that those arriving late will have somewhere to turn for a complete exposition of theory and practice, subject by subject, and class meeting by class meeting. If the reporting were to include the syllabi used and the testing procedures employed it would be helpful. Tape recordings and transcripts of lectures, laboratories, discussions, colloquia, and dialogs have been made and more might well be made. While this may not be the best way to get mass adoption of a new educational idea it may be all that should be hoped for. About the eventual outcome, one can, however, be sanguine because the alternative--mass education, worse compounded and without redeeming features--is something which neither teachers, their students, nor the Nation can stand very long.

VII. THE ECONOMICS OF INDEPENDENT STUDY

Economies of the order suggested below where the faculty is stretched by ratios of 1:6 to 1:3 (Antioch 1:6 or 1:3, the University of Michigan 1:3½, Oberlin 1:3) are not likely to be realized in general practice because there appear to be enough educational disadvantages in the procedures employed--on the testimony of the experimenting faculties--that some accommodation would almost certainly be made in the direction of more teacher contact. If, however, a context for independent study were developed of the sort described in section VI, and if the laboratory procedures employed at Washington State University were used, additional savings in faculty time might be achieved sufficient to make the effective ratio one of 1:3.

Most of the teachers caught up in independent study, whether it be under the banner of honors, independent study, or flexibility, are not so much interested in the economics of these programs as in their intrinsic educational worth. While we share this view, we shall, in this section, examine what little there is in the literature about the economics of independent study.

The Antioch program was set up to determine whether the quality of the students' educational experience could be improved through independent study and also whether a lesser degree of teacher contact was or was not practicable. Oberlin's immediate interest was to determine the feasibility of a proposed three-quarter program running throughout the year, in which a quarter, or one-third of the students' work, might be pursued off campus by independent study. Such an arrangement would relieve the institution of commitments in staff and facilities that it might not be able to afford in the "bulge." The Woman's College of the University of North Carolina and Morgan State College were similarly motivated. The University of Michigan's Instructional Efficiency Research Program has also examined this proposition.

While no one has brought in a balance sheet in which the costs, either in manpower or facilities, are precisely estimated, some approximations have been attempted. The situation in general seems to be that departmental honors programs for juniors and seniors, for gifted or even good students--involving, as they do, small classes, much counseling, and a low student-faculty ratio--are expensive. General honors, that move down into the freshman and sophomore years and particularly those that have been developed in connection with general-liberal education programs have fewer special sections and classes and are less expensive. The tentative findings of some of the experiments with independent study are as follows:

Antioch has, it believes, demonstrated that "no difference has been established"[48] between the performance of students who met with their instructor only once in 2 weeks and those who met six times. Their experimentation was done with lecture-discussion type courses. The classes involved were four small upperclass courses in literature, aesthetics, history, and sociology, and one large sociology course required of all students and containing many first-year students. The ratio in student-faculty contact hours between experimental and control sections was 1:6 in some courses, 1:3 in others. Their estimates are rough approximations because "separating out the demands of the experiment itself"[49] was, to say the least, difficult.

In a report upon project 2 of Michigan's Instructional Efficiency Research Program, the authors have this to say:

"The demands which were placed upon University resources to support the four experimental instructional patterns varied a great deal: (a) The 'lecture classroom' treatment, which required the availability of a meeting room (including lights, heating, janitorial services, etc.) for thirty hours, plus probably forty-five to sixty hours of instructor's presence and preparation time, accommodated thirty-six students but could probably have serviced twice that number with only a negligible increase in demands upon University staff and equipment. (b) The 'discussion classroom' treatment, which required a (smaller) meeting room (etc.) for thirty hours, plus forty-five to sixty hours of instructor's presence and preparation time, accommodated thirteen students and probably could not have provided for many more than twice this number, per instructor, without suffering severe losses in the amount of inter-action time available to each student--the essential component of this kind of instruction. (c) The 'autonomous groups' treatment, which in both sections required no regularly assigned space other than dormitory lounges, cafeteria corners, and private apartments, and which utilized no more than perhaps five hours per section of instructor's preparation, orientation, and evaluation time, accommodated twenty-five students and surely could have serviced ten times this number with no noticeable increase in demands upon faculty time or University facilities. (d) The 'independent students' treatment, which in both sections required no special assignments of University facilities and only about five hours per section of instructor's preparation, orientation, and evaluation time, accommodated twenty-four students and certainly could have handled at least ten times this number with no sizable increase in faculty services or decrease in instructional quality.

"Thus, if faculty time alone is considered, the 'lecture classroom' treatment serviced about 0.7 students per faculty hour expended, and it probably could have serviced about 1.4 students per faculty hour; the 'discussion classroom' treatment serviced about 0.3 students per faculty hour, and it probably could have handled up to 0.5 students per faculty hour; the 'autonomous

[48] "Preliminary Report on Reading Course Study," op. cit., p. 6.
[49] Ibid., p. 1.

groups' and 'independent students' treatments serviced about 2.5 students per faculty hour, and they probably could as effectively have handled 25 or more students per faculty hour. No attempt was made to account in detail for University administrative overhead in the figures shown above. Under the present experimental arrangement it was probably about equal for all treatments. Faculty time spent in the preparation of a self-study guide, for example, would be pro-rated among all experimental groups solely in proportion to their numbers. However, if these costs are assumed to be roughly proportional to the expenditure of faculty time, then they would certainly be greatly reduced for the 'autonomous groups' and 'independent students' treatments if these instructional patterns were to be regularly instituted, utilized to their optimal complements, and if faculty loads and appointments were to be computed accordingly."[50]

If the lecture classroom experience is made the basis for comparison the ratios as regards the number of students who could be accommodated in the several experimental situations were as follows:

"Lecture-classroom . . . could have accommodated" $72\pm = 1$

"Discussion-classroom . . . could have accommodated" $32\pm = \frac{1}{2}\pm$

"Autonomous groups [a type of independent study] . . . could have accommodated" $250\pm = 3\frac{1}{2}$

"Independent students . . . could have accommodated" $240\pm = 3\frac{1}{2}$

Oberlin's conclusion, in an experiment with introductory science and mathematics courses in which the students were required to spend one-third of their time in independent study, is that these students "learn as well as students who are in classroom contact with their instructor for the entire course."[51] The student-faculty contact-hour ratio here between experimental and conventional procedures was 1:3.

It had been established earlier (1945-55) at Washington State University that in an introductory biology course employing a form of independent study (the Socratic method) one large "lecture-conference" type of meeting per week could be substituted for three conventional lectures, with no disadvantage for the students' learning and that a type of laboratory could be devised that required one-third as much supervision as conventional laboratories. The evolution through which this course went is described in detail elsewhere.[52] Briefly, it was as follows: First, a conference or dialog was introduced into a course which, in other respects, was traditional save that it had pretensions of being

[50] "Effects of Varying Degrees of Student Interaction and Student Teacher Contact," op. cit.
[51] "Report on Independent Studies Experiments at Oberlin," op. cit., p. 21.
[52] "Inquiry Into Inquiry," op. cit.

"integrated." Considerable experimentation was done with the dialog, including its effectiveness in small (15 students) and large sections (45 or more students). The lecture evolved from the usual expository type to something best described as a lecture-conference. While the usual student-faculty ratio in laboratories of introductory biology courses is 1:20-24, in this course it is 1:60-72. Since these meetings are, in essence, laboratory-conferences in which the students are organized in teams of 24 and since the laboratory period is three hours long, the instructor can, by staggering his group contacts, meet with all three groups in an hour-long discussion, in one three-hour laboratory. The student-faculty contact in this course is less than that of conventional courses in a ratio of 1:3.[53]

At Carleton the experiment was with small, upper level courses and ran for one-third of a semester. No effort was made to set up control sections or to estimate the savings in faculty time. The conclusion of this faculty was simply that "the objectives of most courses can be obtained with a considerable reduction in the number of class hours, through careful planning and rearrangement of material."[54]

In the University of Michigan's research program, referred to earlier, independent study was examined in two treatments, called "(b) independent, autonomous study groups" and "(c) entirely independent students." The first group, (b), consisted of "from four to five members each, which met--free of any instructor contacts--as many beyond a minimum of seven times and as long, at whatever hours, and in whatever places their members decided." These students, like those in the other treatments, including the conventional classroom, "were assigned the standard text and were provided with a detailed self-study guide and manuals." The entirely independent students (c) were given the same texts, guides, and manuals as the others, but "were given no other specific schedules or assignments and were permitted no instructional contacts (by correspondence or otherwise)" and no contacts between one and any other student. These were, in the language of the study, "no interaction" and "no teacher contact" students.[55]

The experimentation at Washington State University was done before the phrase "independent study" had been coined. The "bulge" was distant enough so that little or no attention was given to the economics of the methods employed. The purpose of the experiment was to see if better methods of teaching and learning could not be devised. Actually, more expensive methods might have been adopted if the experimentation had led in that direction. The method finally hit upon and refined went nameless for years but was eventually dubbed "Socratic." The intent throughout the 10 years of the experiment was to involve students in the learning processes as much as possible, to encourage students to think

[53] "Teaching an Integrated Course," et seq., op. cit.

[54] "Carleton Independent Study Experiment," op. cit., p. 4.

[55] "Effects of Varying Degrees of Student Interaction and Student-Teacher Contact," op. cit., pp. 1-2.

more and to use more critical methods of study. A by-product of the experimentation was the discovery that with less student-teacher contact it was possible to achieve more (and presumably better) learning.

At Carleton, Morgan State, and the Woman's College, economies were worked but no attempt was made to measure these savings carefully.

That the "set," "core," or "common" curriculum discussed in section VI is an efficient device and that integration improves the efficiency of learning is indicated by the experience of an institution that combined some aspects of both.[56] By administering Graduate Record Examinations to its students toward the end of the sophomore year it discovered that these students, the poor and average as well as the good, placed just above the national median, comparing favorably with 4-year college graduates of representative liberal arts colleges. The efficiency of teaching and of learning where all students have the same background and take the same courses in the same order, is too obvious to require elaboration, unless it be to note that this creates a situation in which there is much teaching of students by students because their commonly-held knowledge and common experience permit easy communication.

An important variable in all of this experimentation is the interpretation given to the term "independent study." At Antioch it meant that the students were "expected to cover content and to achieve the objectives of the course through readings, work, and discussions conducted over a period of several weeks without the presence of the instructor."[57] At Oberlin it meant that the students "were required to work independently and without classroom contact with their instructor for one-third of the college year."[58] In mathematics, "the experimental sections were provided with collateral material . . . and occasionally additional problems."[59] In geology, the experimental group met in a separate laboratory section. "No attempt was made to provide for independent laboratory study. The help that was given the experimental group in the laboratory was limited largely to assistance with the laboratory procedures . . . . [Students, organized in study groups, were] given a schedule that included topics to be covered, required reading, supplementary readings, and suggestions for paper-topics." "During this independent study period [of 8 weeks], the instructor visited each group once."[60]

In psychology the experimental group was "divided into interest groups of approximately 5-7 students each, the grouping being based upon common topics among group members. These groups were required to meet once each week to discuss their problems and progress and to hand in written reports of their group meetings. They had also been assigned readings to com-

[56] College of General Education, Boston University.
[57] "Preliminary Report on Reading Course Study," op. cit., p. 1.
[58] "Report on Independent Studies Experiments at Oberlin College," op. cit., p. 4.
[59] Ibid., p. 4.
[60] Ibid., pp. 4-7.

plete during this period which would provide them with a background for the materials to be presented when they returned to class meetings."[a]

As with the experiments described earlier, the authors of the New College Plan point out that their primary goal is to provide "for liberal education of the highest quality, and [that their] other goal, low cost, has not been allowed to compromise educational requirements at any point. But educational and economic advantages can be made to go hand in hand."[c] It is calculated that the 20:1 student-faculty ratio, made possible by independent study, enables the college to do without endowment income. Once the college is established, it is hoped that student fees will be sufficient to support the enterprise.

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[a] Ibid., p. 10.
[c] "The New College Plan," op. cit., p. 13.

VIII. THE RESEARCH NEEDED IN INDEPENDENT STUDY[63]

THE NEED in independent study is for research that puts the pieces together. This would consist mainly of pilot experimentation and could be done in several ways:

1. By providing "independent study", not in discrete courses, but in an integrated curriculum. Although Antioch, Oberlin, Carleton, Morgan State, et al. have experimented with independent study in several different courses, no institution has attempted to develop a curricular context for independent learning.
2. By searching the experience colleges and universities have had with integration and common curricula and making provision for independent study in courses and curricula that reflect the lessons in this experience. (See pp. 25 to 26.)
   Since better conceptualization is one of the purposes of independent learning, some experimentation should be done with conceptual integration.
3. By requiring students to take all of their work in "independent study" courses for at least a semester; and preferably for 1 or 2 years. An exposure of students to independent study for only 3 hours in 15, 30, or even 120 makes it difficult, if not impossible, to measure gains in critical thinking, creativity, or changes in attitudes and values. These are thought to be some of the potential "plus values" in independent study. On the limited basis of the experimentation done to date it has been impossible to demonstrate that independent study has been consistently more successful in realizing these critical attributes of the highly educated man than traditional approaches. Until more of a student's time is spent in what for him is a strange experience, we are not likely to learn whether independent study does or does not have the "plus values" predicted for it.
4. By reviewing the teaching methods employed in (and outside of) independent study, and experimenting with some one appropriate method such as student inquiry (problem, case, Socratic, or research methods); preferably in all the courses taken by a student for a semester or longer. The critical factor in independent study may not be courses or curricula, reading lists or projects, or the greater amount of study done by students. It may rather be the quality of the learning and of the teaching. This thesis has not been effectively tested.

[63] A series of working hypotheses.

5. By "broadening" honors-type approaches to independent study so that:
   a. All students who can profit from independent study are provided with this opportunity.
   b. Lower as well as upper division students are included.
   c. Experimentation is done with some of the more promising teaching techniques (4 above).

While pilot projects have been instituted in (a) or (b) or (c), no one has combined all three. Many of the individuals and institutions with the longest history in honors recognize that these programs are being and will continue to be broadened in this way. They also agree that honors programs must give "independent study" a fair trial, for if faculties could be used more economically, the chief "brake" on honors programs, their costs, would be removed. It is recognized that it is not easy to broaden honors because larger segments of college faculties have to be involved and major curricular adjustments made.

6. By combining experimentation with the pieces of 1, 2, 3, 4, and honors-type instruction. This would be the penultimate in synthesis in that it would examine all the hypotheses developed to date in independent study and honors programs except the practices described in the introduction under flexibility.
7. By making, in addition to the above, institutional provision for early entrance into college and hence into this program, advanced placement, credit by examination (or similar devices), and comprehensive examinations. This would be the ultimate in experimental synthesis.

In the experimentation outlined above, careful provision should be made for evaluation. To do this well, the newer methods developed for testing critical thinking, creativity, attitudes, and values should be evaluated and improved by panels of "experts" assembled for the purpose and these methods and experts used in the pilot studies undertaken. Newer methods for calculating costs per student or other units of space, time, process, or product should be similarly evaluated, improved and used. This would permit teachers in experimental programs to devote their total energies to their teaching with some assurance that they might learn, at the end of the experiment, whether improvements had or had not been worked, and at what cost in time, space and dollars.

8. By examining the contribution made to any of the above, by any combination of audio-visual techniques.
9. By developing a repository of good working models. If transcripts were made of effective lectures, conferences and laboratories, seminars and colloquia, lists prepared of good primary sources and other readings, and syllabi developed in diverse subjects at different levels, these materials could be put to good use by institutions experimenting with independent study.

All of the experimentation referred to above should, of course, be done with representative students in representative colleges if it is to have meaning and impact for the many and varied institutions that characterize American higher education.

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